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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,509	10/31/2003	Dhruva Ranjan Chakrabarti	200314557-1	9606

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EXAMINER

CHOU, ANDREW Y

ART UNIT	PAPER NUMBER
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2192

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/698,509	Applicant(s) CHAKRABARTI ET AL.	
	Examiner Andrew Y. Chou	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/31/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-13 have been examined. Claims 1, 7, and 13 are the independent claims. The priority date recognized for this application is 10/31/2003.

Information Disclosure Statement

2. The Office acknowledges receipt of the Information Disclosure Statement filed on 10/31/2003. It has been placed in the application file and the information referred to therein has been considered by the examiner.

Oath/Declaration

3. The Office acknowledges receipt of a properly signed oath/declaration filed on 10/31/2003.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-13 are rejected under 35 U.S.C 102(b) as being anticipated by Schmidt US 6,195,793 B1 (hereinafter Schmidt).

Claim 1:

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Schmidt discloses a method of compiling a computer program with inline specialization (see Abstract), the method comprising:

given a call-graph, if multiple call-chains in it have at least one common call site, (see for example column 3, lines 46-51, "call graph", FIG. 4, and related text) the ability, to inline a common call site in one or more (but not all) of the call-chains (see for example column 3, lines 48-64, "inlining", FIG. 4, blocks 404, 408, and 422, and related text, column 6, lines 38-52).

Claim 2:

Schmidt further discloses the method of claim 1, further comprising: whenever a call site from routine x to routine y is inlined, new edges are added from routine x to all routines inlinable within routine y (see for example FIGURE 3, step 316, and related text).

Claim 3:

Schmidt further discloses the method of claim 2, further comprising: materialization of summary information for new call sites added to the call-graph (see for example FIGURE 2, step 210, "calculate code bloat estimate for current arc", and related text).

Claim 4:

Schmidt further discloses the method of claim 3, further comprising: addition of the new call sites to the global work-list so that these call sites are considered for inlining (see for example FIGURE 2, step 204, FIGURE 3, step 306, column 5, lines 47-49, and related text).

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Claim 5:

Schmidt further discloses the method claim 4, further comprising:

addition of dependence relationships between call sites. If a new call site, y, is added because of inlining of call site, x, then y is dependent on x (see for example column 7, lines 30-43).

Claim 6:

Schmidt further discloses the method of claim 5, further comprising:

patching of the new call site, y, during inline transformation of call site, x, with the aim of generating the intermediate transformation for call site, y (see for example FIGURE 2, and related text).

Claim 7:

Schmidt discloses an apparatus for compiling a computer program (see for example FIGURE 1, and related text) with inline specialization which includes the ability, to inline a common call site in one or more (but not all) of the call-chains in a call-graph (see for example column 3, lines 48-64, "inlining", Fig. 4, blocks 404, 408, and 422, and related text, column 6, lines 38-52).

Claim 8:

Schmidt further discloses the apparatus of claim 7, wherein whenever a call site from routine x to routine y is inlined, new edges are added from routine x to all routines inlinable within routine y (see for example FIGURE 3, step 316, and related text).

Claim 9:

Schmidt further discloses the apparatus of claim 8, wherein materialization of summary

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information for new call sites added to the call-graph is performed (see for example FIGURE 2, step 210, "calculate code bloat estimate for current arc", and related text).

Claim 10:

Schmidt further discloses the apparatus of claim 9, wherein the new call sites are added to the global work-list so that these are considered for inlining (see for example FIGURE 2, step 204, FIGURE 3, step 306, column 5, lines 47-49, and related text).

Claim 11:

Schmidt further discloses the apparatus of claim 10, wherein dependence relationships are created between call sites (see for example column 7, lines 30-43).

Claim 12:

Schmidt further discloses the apparatus of claim 11, wherein the inline transformation patches up the intermediate representation of the new call sites (by considering the dependence relationships) before potentially inlining them (see for example FIGURE 2, and related text).

Claim 13:

Schmidt discloses a computer program product comprising a computer-usable medium having computer-readable code embodied therein (see for example FIGURES 1 & 6, and related text), the computer program product being compiled from source code, including inline specialization such that given a call-graph, if multiple call-chains in it have at least one common call site, the ability exists to inline a common call site in one or more (but not all) of the call-chains graph (see for example column 3, lines 48-64, "inlining", FIGURE 2, Fig. 4, and related text).

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Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

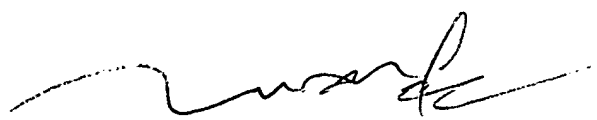
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Y. Chou whose telephone number is (571) 272-6829. The examiner can normally be reached on Monday-Friday, 8:00 am – 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam, can be reached on (571) 272-3695.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Any inquiry of a general nature of relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is (571) 272 2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

AYC



TUAN DAM
SUPERVISORY PATENT EXAMINER